The

FUTURE OF WAR

IN ITS TECHNICAL ECONOMIC AND POLITICAL RELATIONS

BY

JEAN DE BLOCH

TRANSLATED BY R. C. LONG, AND WITH A CONVERSATION WITH THE AUTHOR BY W. T. STEAD, AND AN INTRODUCTION BY EDWIN D. MEAD

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INTRODUCTION

The death of M. Jean de Bloch, which occurred at Warsaw just as the year (1902) began, is a misfortune for the whole world. It is peculiarly so at this immediate juncture; for the imperative problem with the world at this time is how to get rid of war and substitute for it a rational way of settling international differences, and no other man in our time has studied this problem so scientifically or contributed so much to its solution as Jean de Bloch. Indeed, I think it is not too much to say that M. Bloch was the most thorough and important student of the question of War in all its details and upon its many sides who has ever lived, and that his great book upon "The Future of War" will remain the chief armory from which the men of the twentieth century who are warring against war will continue to draw until their sure victory comes, and all national and international disputes are settled in the courts, as to-day personal disputes are settled.

I think that no book ever written in the cause of the peace and order of the world, save Hugo Grotius's great work alone, has rendered or is likely to render such influential practical service as Bloch's "Future of War," supplemented as it has been by his articles in the various reviews during the years since the work was first published. Dante's "De Monarchia," the "Great Design" of Henry IV, William Penn's "Plan for the Peace of Europe," Immanuel Kant's "Eternal Peace," the essays of LaCroix, Saint Pierre, Bellers and Bentham, Sumner's "True Grandeur of Nations," —these high appeals and such as these have pierced to the hearts of thinking men in the successive centuries, and their general and cumulative effect in ele-

vating the tone and broadening the outlook of society upon the question of War and its evils has been immense. It would be hard, however, to lay the hand upon any distinct practical reform or progress wrought by any of them in its own day or days that followed. But Grotius's "Rights of War and Peace" wrought almost a revolution, and it did it almost at once. With it, it may be said with a high degree of justice, international law was born into the world almost full grown; and from the time of its appearance war, horrible at its best, has been in its usages a very different thing from what it was before. Equally definite, distinct and practical has been the influence of Bloch's "Future of War"; and I believe that it will be seen at the end of this twentieth century that its influence has been equally powerful and far-reaching.

Bloch's monumental work upon "The Future of War," in six volumes, was published in Russian five or six years ago. It was the result of a decade's special study by this eminent financier and economist, whose whole life's experience had fitted him to understand so well those phases of the question which he felt it most important to emphasize to Europe. Editions of the complete work have been brought out in German and in French, under the distinguished author's own supervision. No edition has yet appeared in English; only this translation of the last volume, in which the conclusions are summarized, has been published for popular use. It is a pleasure, however, to be able to state that the preparation of a complete English edition is about to be undertaken. No library in America or England, no university or college, no editorial room or minister's study should be without it. Meantime it is a satisfaction to know and to assure the public that the present volume contains the gist of the whole work, the clear statement of all its important principles. It will always be the best thing for the ordinary reader, giving all which he requires. I count it a peculiar benefaction that a cheap edition of this work is now given to the public by a publisher whose heart is in it, making it possible for

all men to possess it and for the friends of peace to circulate it by the thousand. I trust that they will earnestly unite to do it. The Peace cause has suffered because so much of its best literature is not available in attractive and cheap form and is not widely circulated. This need we are assured is now to be effectively met; and the present publication is surely a good beginning.

The matter of really greatest moment in our time for the student of War and the worker for Peace has not been the war in South Africa nor the war in the Philippines, but the Hague Conference. The Hague Conference did not come into existence without ancestry, without intellectual forces which made it imperative and certain. It came not simply because the Czar sent out his Rescript; it was because the Czar himself had been converted, that commanding intellectual forces had been in operation in Russia. I think there was none of these intellectual forces more potent than that exerted by Jean de Bloch. Bloch's book was an epoch-making book. It startled the Czar and his ministers; it startled all serious thinkers in Europe; it was one of the cardinal forces that compelled the Conference at the Hague. At that Conference, in a private and unofficial capacity, Bloch himself was present throughout. He always declined the honor paid him of having suggested the Conference to the Czar by his book; the idea he declared was the result of general evolution, which was forcing upon all serious minds the conviction of the folly and impossibility of continuing the war system.

If ever a man is born under conditions which naturally compel him to think of the tragedies of war, of its horrors and burdens, and of the evils of those race antagonisms which so often lead to war, I think it must be a Polish Jew. The very word Jew brings up the thought of the sufferings, the social and political ostracism, the injustices and wrongs of every sort, which have been the lot of the Jew through all these centuries. The name of Poland reminds us equally impressively of those scarce slumbering hatreds and

antagonisms there still after a hundred years, a monument to the cruelty and wickedness of the wars which ended Poland's national life, as the close of one of the most mournful and shameful chapters in human history.

Jean de Bloch was a Polish Jew, a poor Polish Jew, beginning his life as a pedlar, hawking his wares about the streets of Warsaw. Finally getting through good fortune a sum of money, he resolved that he would push out of the ignorance and narrowness into which he was born, and he found his way to Berlin. There he studied for three years, largely with French and English tutors, and then went back to Warsaw. He was a man of immense energy and a devoted student. He rapidly acquired a fortune as a banker and also obtained a high reputation as a sociologist and an economist. He married a rich and talented woman, and their home became a notable intellectual centre. He wrote exhaustive works in many volumes upon Russian railways, Russian finance, and Russian local government. It was to him presently that the Russian commercial folk and the Russian government itself were turning to finance their operations. He became the leading banker of Poland—a sort of Polish Rothschild—and he became the president of important railway systems. He was led as a result of all this to understand what were the menaces to the economy of states of the war system obtaining in Europe. Seeing that war lay at the root of the trouble, he devoted himself for years to the preparation of his exhaustive work upon "The Future of War," the most powerful arraignment of war and the most powerful argument for the peace of the world which has been written in our time, or perhaps in any time. From his youth he had studied war, and he had written many pamphlets on military subjects; but "The Future of War" was his supreme effort.

With that work Bloch came to the Hague Conference. He came, he said, as a learner; but he came also as a teacher and a helper. He came to bring his book, to distribute it, to explain it, and to acquire in-

formation and education for himself. He sincerely believed that his book was the Bible of this cause. He was not a vain nor an opinionated man, but he had the profoundest confidence in his insight and in the things which he had learned. His argument was, on the whole, and in the place where he laid the emphasis, a new one. The peace societies had in the main appealed to the moral side of this matter; Jean de Bloch appealed to the business side. The appeals of the apostles of peace have been for the most part to the world's humanity and piety; although it would be a mistake and a wrong not to remember that from William Penn's time to Charles Sumner's they have not failed to urge again and again the economic argument and point out what would result if the world would apply to constructive ends what it wastes on war. Jean de Bloch said: We must appeal to the purse, to common sense, and make men see that this war system is the most stupid thing in creation. That was where he directed almost his whole argument. He said that if it came to a great European war, that war could only cease with the annihilation of one combatant and the financial ruin of the other. He said that, so far from this question of an international court being a Utopian thing, it was the men who were going on with their schemes for wars who were really dealing in chimeras; that the time has come when we should apply our resources, not to the things which waste and devastate, but to the things that build up states and the industries and the social welfare of men. He appealed to the facts of war as they unrolled themselves before the eyes of Europe; he showed what the real results of the Franco-Prussian War were; he drew the lessons from the Russo-Turkish War. The destructiveness of modern warfare, with its frightful new weapons, becomes so appalling that a general European war would bring the universal bankruptcy of nations. The present armed peace, indeed, is so costly that the burdens of it already threaten social revolution in almost every country in Europe.

INTRODUCTION

Bloch, unlike most peace men, was one of the most critical students of military affairs; he met the military men upon their own ground. He lectured last summer to the United Service Institution in London, a body of military experts, with a major-general in the chair; and he proved himself the superior of those practical and learned military men upon every technical point, and worsted them in the debate.

In the last years of Bloch's life he was engaged chiefly in drawing from the South African War the warning lessons which the world needs to learn. He has shown that the Boers have been so successful not, as has been often said, because of the topography of the country or because they are particularly good marksmen, but because they have profited by the utterly changed conditions of war. Bloch shows that the fundamental change came in with the American Civil War. The American Civil War, he was never tired of telling the people of Europe, settled it that the alleged superiority of disciplined armies over volunteer troops amounts to nothing; that the ordinary military training is often a positive disadvantage in preparing for modern warfare. War is no longer the clash of solid phalanxes with solid phalanxes in showy, heroic combat upon battlefields. Cavalry and artillery are rapidly becoming useless. Soldiers cannot be compacted, but must be spread apart, and each must rely upon himself as never before. One man in defence is a match for ten in offence; the methods of guerilla warfare become more and more common and necessary; and the civilian soldier, the simple volunteer, is as good as the regular, and often better.

This is a thing of immense moment; for if it is true it makes the whole effort to maintain great armaments a vain thing. Robert Peel said with discernment that, instead of wasting the resources of a country to maintain great armies and navies, the sensible nation in the future will rely upon its own latent energies, perfectly sure that if it has inherent energy it can always improvise powers necessary for any de-

fence at very short notice. There is no practical demand or excuse longer for costly armies and navies; all this great armament is waste. Bloch has shown that thing to the modern world,—that from the scientific point of view armies and navies are not a source of strength to any nation, but rather a source of weakness; that they do not defend, but rather drain and endanger. He has not been answered; I do not believe he can be answered. We are his debtors,—the foolish and long-suffering world is his debtor,—for the thoroughness and power with which he has taught this great lesson.

"The Future of War" was but the culmination of M. Bloch's remarkable activities in his life's campaign for peace and an organized world. His articles in the reviews and magazines—Russian, French, German and English—were innumerable. His impressive article upon "Militarism in Politics," in the last December number of the *Contemporary Review*, should be read by all Americans as well as by all Englishmen, at this time. His earlier article in the same review (September, 1901) on "The Wars of the Future" is the most striking statement in brief of the main principles of his great book; it should be printed as a tract and scattered broadcast up and down the land. Another powerful statement of his position has appeared in our own *North American Review* since his death (April, 1902).

Bloch was not only present at the Hague during the Conference, but at Paris during the Exposition, always indefatigable in his work of enlightenment. When necessary he took the platform; and so it was that we had the privilege of seeing and meeting him when he came to London last summer to deliver his lectures on the Transvaal War before the Royal United Service Institution, to which I have referred. After one of these lectures he invited us to a personal meeting; and at this meeting he unfolded with great earnestness his scheme for having established at several of the world's leading centres what he called War and Peace Institutions. These were to be large mu-

seums, in which, by pictures, panoramas, models, charts and many means, the real character and significance of modern warfare should be brought home to the actual perception of men and women, who now for the most part have no adequate comprehension of what war is. Especially did he wish to have the practical and economic aspects emphasized, to make men see how and why, in the changed military conditions, a really successful war on the part of one great power upon another really great power is impossible.

At the time of his death M. Bloch was actually engaged in the establishment of the first of these remarkable museums at Lucerne; and he provided for its generous endowment. He chose Lucerne as a point to begin, since it is a place so much visited, and he felt that the knowledge of the work would spread thence to all the world, and the work be largely copied. He had secured a large and imposing building at Lucerne and was prosecuting the work of preparation at large personal expense; for M. Bloch was a man of great wealth, and put much money, as well as thought and zeal, into his peace propaganda.

He was anxious that what he was planning in Lucerne should also be done in London; and he gave me a long typewritten outline of his scheme to submit to William Mather, George Cadbury and other leading peace men in England, whose coöperation might be enlisted. I believe that London will yet have such an institution. I sincerely hope that America will have such a one; and this was M. Bloch's earnest desire. He spoke of New York and Washington as appropriate locations; and in one of these cities, through the munificence of some one of our haters of war and lovers of peace, who could certainly put a half million dollars to no more useful or necessary service to-day, this institution should surely rise and continue to teach its lessons until they are no longer needed.

I wish that it might be founded now, while the workers for peace through all the world are mourning for Bloch, as a strong assurance that his work and

influence shall be perpetuated and shall grow. I wish that in memory of him it might be called simply *The Bloch Institution.* I wish that the things which he suggests in the outline which he prepared, and which I hope will soon be published, might all be carried out; and I wish that, in sympathetic hands, catching his great inspiration, the institution might be developed with a fulness of which even he hardly dreamed. I wish that one great hall might be devoted to copies of all of Verestchagin's pictures, and that other halls might serve similar ends. I wish that year by year addresses might be given at the institution by the world's best thinkers in behalf of a rationally organized world; that peace and arbitration conferences might there be regularly held; that from that centre all the world's best literature upon this commanding interest might be widely circulated; and that useful publications might there have their source. I can think of no institution that would be of greater service in America at this time. I can think of no worthier monument which we could rear to Jean de Bloch. His noblest and immortal monument he has himself created in his great work on "The Future of War."

EDWIN D. MEAD.

CONVERSATIONS WITH M. BLOCH

By William T. Stead

"The Future of War" is the title of M. de Bloch's voluminous cyclopædia on the art of war, past, present, and to come. But that is a mistake. For M. Bloch's thesis is that there is no war to come, that war indeed has already become impossible.

It would really have been clearer therefore to call this translation of the sixth and concluding volume of his immense book "Is War Now Impossible?"—as in the English edition,—for this title gives a much clearer idea of the contents. For M. Bloch contends in all sober seriousness that war—great war in the usual acceptation of the word—has already, by the natural and normal development of the art or science of warfare, become a physical impossibility!

That is what this book was written to prove.

PREFACE

But, before reading the chapters crammed with statistics and entering upon the arguments of the great Polish economist, the reader may find it convenient to glance over, as a preliminary introduction to the book, the following free rendering of the conversations which I have had the privilege of enjoying with the author at St. Petersburg and in London.

"UTOPIANS," said M. Bloch; "and they call us Utopians, idealists, visionaries, because we believe that the end of war is in sight? But who are the Utopians, I should like to know? What is a Utopian, using the term as an epithet of opprobrium? He is a man who lives in a dream of the impossible; but what I know and am prepared to prove is, that the real Utopians who are living in a veritable realm of phantasy are those people who believe in war. War has been possible, no doubt, but it has at last become impossible, and those who are preparing for war, and basing all their schemes of life on the expectation of war, are visionaries of the worst kind, for war is no longer possible."

"That is good news, M. Bloch," I replied; "but is it not somewhat of a paradox? Only last year we had the Spanish-American war; the year before, the war between Turkey and Greece. Since when has war become impossible?"

"Oh," replied M. Bloch, with vivacity, "I do not speak of such wars. It is not to such frontier brawls, or punitive operations such as you in England, for instance, are perpetually engaging in on the frontiers of your

extended empire, that I refer when I say that war has become impossible. When soldiers and statesmen speak about the War of the Future, they do not refer to such trumpery expeditions against semi-barbarous peoples. The war of the future, the war which has become impossible, is the war that has haunted the imagination of mankind for the last thirty years, the war in which great nations armed to the teeth were to fling themselves with all their resources into a struggle for life and death This is the war that every day becomes more and more impossible. Yes, it is in preparations against that impossible war that these so-called practical men, who are the real Utopians of our time, are wasting the resources of civilisation."

"Pray explain yourself more clearly, M. Bloch."

"Well," said he, "I suppose you will admit that war has practically become impossible for the minor States. It is as impossible for Denmark or for Belgium to make war to-day as it would be for you or for me to assert the right of private war, which our forefathers possessed. We cannot do it. At least, we could only try to do it, and then be summarily suppressed and punished for our temerity. That is the position of the minor States. For them war is practically forbidden by their stronger neighbours. They are in the position of the descendants of the feudal lords, whose right of levying war has vanished owing to the growth of a strong central power whose interests and authority are incompatible with the exercise of what used to be at one time an almost universal right. For the minor States, therefore, war is impossible."

"Admitted," I replied. "Impossible, that is to say, without the leave and licence of the great Powers."

"Precisely," said M. Bloch; "and hence, when we discuss the question of future war, we always deal with it as a war between great Powers. That is to say, primarily, the long talked-of, constantly postponed war between France and Germany for the lost provinces; and, secondly, that other war, the thought of which has gradually replaced that of the single-handed duel between France and Germany, viz., a war between the Triplice and the Franco-Russian Alliance. It is that war which constantly pre-occupies the mind of statesmen and sovereigns of Europe, and it is that war which, I maintain, has become absolutely impossible."

"But how impossible, M. Bloch? Do you mean morally impossible?"

"No such thing," he replied. "I am dealing not with moral considerations, which cannot be measured, but with hard, matter-of-fact, material things, which can be estimated and measured with some approximation to absolute accuracy. I maintain that war has become impossible alike from a military, economic, and political point of view. The very development that has taken place in the mechanism of war has rendered war an impracticable operation. The dimensions of modern armaments and the organisation of society have rendered its prosecution an economic impossibility, and, finally, if any attempt were made to demonstrate the inaccuracy of my assertions by putting the matter to a test on a great scale, we should find the inevitable result in a catastrophe which would destroy all existing political organisations. Thus, the great war cannot be made, and any attempt to make it would result in suicide. Such, I believe, is the simple demonstrable fact."

"But where is the demonstration?" I asked.

M. Bloch turned and pointed to his encyclopædic work upon "The Future of War," six solid volumes, each containing I do not know how many quarto pages, which stood piled one above the other.

"Read that," he said. "In that book you will find the facts upon which my demonstration rests."

"That is all very well," I said; "but how can you, M. Bloch, an economist and a banker, set yourself up as an authority upon military matters?"

"Oh," said M. Bloch, "you have a saying that it is often the outsider that sees most; and you must remember that the conclusions arrived at by military experts are by no means inaccessible to the general student. In order to form a correct idea as to the changes that have taken place in the mechanism of war, it is quite conceivable that the bystander who is not engaged in the actual carrying out of the evolution now in progress may be better able to see the drift and tendency of things than those who are busily engaged in the actual detail of the operation. I can only say that while at first hand I have no authority whatever, and do not in any way pose as a military or naval expert, I have taken all imaginable pains in order to master the literature of warfare, especially the most recent treatises upon military operations and the handling of armies and fleets, which have been published by the leading military authorities in the modern world. After mastering what they have written, I have had opportunities of discussing personally with many officers in all countries as to the conclusions at which I have arrived, and I am glad to know that in the main there is not much difference of opinion as to the accuracy of my general conclusions as to the nature of future warfare."

"But do they also agree with you," I said, "that war has become impossible?"

"No," said M. Bloch, "that would be too much to expect. Otherwise Othello's occupation would be gone. But as they have admitted the facts, we can draw our own conclusions."

"But I see in your book you deal with every branch of the service, armaments of all kinds, manœuvres, questions of strategy, problems of fortification—everything, in fact, that comes into the consideration of the actual conduct of modern war. Do you mean to tell me that military men generally think you have made no mistakes?"

"That would be saying too much. The book was referred by the Emperor of Russia at my request to the Minister of War, with a request that it should be subjected to examination by a council of experts. The results of that council were subsequently communicated to the Emperor in the shape of a report, which set forth that while in dealing with so very many questions it was impossible to avoid some mistakes, it was their opinion that the book was a very useful one, and that it was most desirable that it should be placed in the hands of all staff officers. They also added an expression of opinion that no book could contribute so much to the success of the Conference or to the information of those who were to take part in its deliberations.

"The one question upon which strong difference of opinion existed was that concerning the use of the bayonet. I have arrived at the conclusion, based upon a very careful examination of various authorities, that the day of the bayonet is over. In the Franco-German war the total mortality of the Germans from cold steel amounted to only one per cent. The proportion on the

French side was higher, but I think it can be mathematically demonstrated that, in future, war will be decided at ranges which will render the use of the bayonet impossible. General Dragomiroff, however, a veteran of the old school, cannot tolerate this slight upon his favourite weapon. In his eyes the bayonet is supreme, and it is cold steel which at the last will always be the deciding factor in the combats of peoples. He therefore strongly condemns that portion of my book; but it stands on its own merits, and the reader can form his own judgment as to the probability of the bayonet being of any practical use in future war."

"General Dragomiroff's devotion to the bayonet," I remarked, "reminds me of our admirals' devotion to sails in our navy. Fifteen years ago it was quite obvious that the fighting ship of the future had no need for sails—that, indeed, sails were an encumbrance and a danger; but all the admirals of the old school attached far more importance to the smartness in furling and unfurling sail than they did to proficiency in gunnery or in any of the deciding factors in naval battles. They clung to masts and yards for years after all the younger officers in the service knew that they might as well have clung to bows and arrows; and I suppose you will find the same thing in regard to the bayonet."

"Yes," said M. Bloch, "the bayonet seems to me altogether out of date. No doubt it is a deadly enough weapon, if you can get within a yard of your enemy; but the problem that I have been asking myself is whether in future combatants will ever be able to get within one hundred yards of one another, let alone one yard."

"But then," I rejoined, "if that be so, wars will be much less deadly than they were before."

"Yes and no," said M. Bloch; "they will become less deadly because they have become more deadly. There is no kind of warfare so destructive of human life as that in which you have bodies of men face to face with each other, with nothing but cold steel to settle the issue. The slaughter which took place in the old wars between barbarians, or between the Romans and the barbarian tribes on their frontiers, was simply appalling. There is nothing like it in modern warfare, and this diminution of the mortality in battle has been, paradoxically enough, produced by the improved deadliness of the weapons with which men fight. They are, indeed, becoming so deadly that before long you will see they will never fight at all."

"That," I replied, "was the faith of Rudyard Kipling, who wrote me a few months ago saying that he relied for the extinction of war upon the invention of a machine which would infallibly slay fifty per cent. of the combatants whenever battle was waged. 'Then,' he said, 'war would cease of itself.' The same idea was expressed by Lord Lytton in his novel of 'The Coming Race,' in which he attributed the final disappearance of war from the planet to the discovery of vril, a destructive so deadly that an army could be annihilated by the touch of a button by the finger of a child."

"Yes," said M. Bloch; "that is so; but until mankind has made experience of the deadliness of its weapons there will be terrible bloodshed. For instance, at Omdurman the destruction inflicted upon the forces of the Khalifa came very near the fifty per cent. standard of Rudyard Kipling. That one experience was probably sufficient even for the Dervishes. They will never again face the fire of modern rifles. The experience which they have learned is rapidly becoming generalised throughout

the armies of Christendom, and although there may be some frightful scenes of wholesale slaughter, one or two experiences of that kind will rid our military authorities of any desire to come to close quarters with their adversaries."

"What a paradox it is!" I replied. "We shall end by killing nobody, because if we fought at all we should kill everybody. Then you do not anticipate increased slaughter as the result of the increased precision in weapons?"

"You mistake me," said M. Bloch. "At first there will be increased slaughter—increased slaughter on so terrible a scale as to render it impossible to get troops to push the battle to a decisive issue. They will try to, thinking that they are fighting under the old conditions, and they will learn such a lesson that they will abandon the attempt for ever. Then, instead of a war fought out to the bitter end in a series of decisive battles, we shall have as a substitute a long period of continually increasing strain upon the resources of the combatants. The war, instead of being a hand-to-hand contest in which the combatants measure their physical and moral superiority, will become a kind of stalemate, in which neither army being able to get at the other, both armies will be maintained in opposition to each other, threatening each other, but never being able to deliver a final and decisive attack. It will be simply the natural evolution of the armed peace, on an aggravated scale."

"Yes," said M. Bloch, "accompanied by entire dislocation of all industry and severing of all the sources of supply by which alone the community is enabled to bear the crushing burden of that armed peace. It will be a multiplication of expenditure simultaneously accompanied by a

diminution of the sources by which that expenditure can be met. That is the future of war—not fighting, but famine, not the slaying of men, but the bankruptcy of nations and the break-up of the whole social organisation."

"Now I begin to perceive how it is that we have as a prophet of the end of war a political economist, and not a soldier."

"Yes," said M. Bloch, "it is as a political economist that I discovered the open secret which he who runs may read. The soldier by natural evolution has so perfected the mechanism of slaughter that he has practically secured his own extinction. He has made himself so costly that mankind can no longer afford to pay for his maintenance, and he has therefore transferred the sceptre of the world from those who govern its camps to those who control its markets."

"But now, M. Bloch, will you condescend to particulars, and explain to me how this great evolution has been brought about?"

"It is very simple," said M. Bloch. "The outward and visible sign of the end of war was the introduction of the magazine rifle. For several hundred years after the discovery of gunpowder the construction of firearms made little progress The cannon with which you fought at Trafalgar differed comparatively little from those which you used against the Armada. For two centuries you were content to clap some powder behind a round ball in an iron tube, and fire it at your enemy.

"The introduction of the needle gun and of breech-loading cannon may be said to mark the dawn of the new era, which, however, was not definitely established amongst us until the invention of the magazine rifle of very small calibre. The magazine gun may also be mentioned as an

illustration of the improved deadliness of firearms; but, as your experience at Obdurman showed, the deciding factor was not the Maxim, but the magazine rifle."

"Yes," I said; "as Lord Wolseley said, it was the magazine rifle which played like a deadly hose spouting leaden bullets upon the advancing enemy."

"Yes," said M. Bloch, "and the possibility of firing half a dozen bullets without having to stop to reload has transformed the conditions of modern war."

"Do you not exaggerate the importance of mere rapidity of fire?" I asked.

"No," said M. Bloch; "rapidity of fire does not stand alone. The modern rifle is not only a much more rapid firer than its predecessors, but it has also an immensely wider range and far greater precision of fire. To these three qualities must be added yet a fourth, which completes the revolutionary nature of the new firearm, and that is the introduction of smokeless powder."

"The Spanish-American campaign," I said, "illustrated the importance of smokeless powder; but how do you think the smokelessness of the new explosives will affect warfare in the future?"

"In the first case," said M. Bloch, "it demolishes the screen behind which for the last 400 years human beings have fought and died. All the last great battles have been fought more or less in the dark. After the battle is joined, friends and foes have been more or less lost to sight in the clouds of dense smoke which hung heavy over the whole battlefield. Now armies will no longer fight in the dark. Every soldier in the fighting line will see with frightful distinctness the havoc which is being made in the ranks by the shot and shell of the enemy. The veil which gunpowder spread over the worst horrors of the battlefield has

been withdrawn for ever. But that is not the only change. It is difficult to over-estimate the increased strain upon the nerve and *morale* of an army under action by the fact that men will fall killed and wounded without any visible or audible cause. In the old days the soldier saw the puff of smoke, heard the roar of the gun, and when the shell or shot ploughed its way through the ranks, he associated cause and effect, and was to a certain extent prepared for it. In the warfare of the future men will simply fall and die without either seeing or hearing anything."

"Without hearing anything, M. Bloch?"

"Without hearing anything, for although the smokeless powder is not noiseless, experience has proved that the report of a rifle will not carry more than nine hundred yards, and volley-firing cannot be heard beyond a mile. But that brings us to the question of the increased range of the new projectiles. An army on march will suddenly become aware of the comparative proximity of the foe by seeing men drop killed and wounded, without any visible cause; and only after some time will they be able to discover that the invisible shafts of death were sped from a line of sharp-shooters lying invisible at a distance of a mile or more. There will be nothing along the whole line of the horizon to show from whence the death-dealing missiles have sped. It will simply be as if the bolt had come from the blue. Can you conceive of anything more trying to human nerves?"

"But what is the range of the modern rifle?"

"The modern rifle," said M. Bloch, "has a range of 3000 or 4000 metres—that is to say, from two to three miles. Of course, I do not mean to say that it will be used at such great distances. For action at long range, artillery is much more effective. But of that I will speak

shortly. But you can fairly say that for one mile or a mile and a half the magazine rifle is safe to kill anything that stands between the muzzle and its mark; and therein," continued M. Bloch, "lies one of the greatest changes that have been effected in modern firearms. Just look at this table" (see page 4). "It will explain better than anything I can say the change that has been brought about in the last dozen years.

"In the last great war, if you wished to hit a distant mark, you had to sight your rifle so as to fire high up into the air, and the ball executing a curve descended at the range at which you calculated your target stood. Between the muzzle and the target your bullet did no execution. It was soaring in the air, first rising until it reached the maximum height, and then descending it struck the target or the earth at one definite point some thousand yards distant. Contrast this with the modern weapon. There is now no need for sighting your gun so as to drop your bullet at a particular range. You aim straight at your man, and the bullet goes, as is shown in the diagram, direct to its mark. There is no climbing into the air to fall again. It simply speeds, say, five feet from the earth until it meets its mark. Anything that stands between its object and the muzzle of the rifle it passes through. Hence whereas in the old gun you hit your man only if you could drop your bullet upon the square yard of ground upon which he was standing, you now hit him so long as you train your rifle correctly on every square yard of the thousand or two thousand which may intervene between the muzzle of your gun and the end of the course of the shot. That circumstance alone, even without any increase in the rapidity of the fire, must enormously add to the deadliness of the modern firearms."

"Could you give me any exact statistics as to the increased rapidity of fire?"

"Certainly," said M. Bloch. "That is to say, I can give you particulars up to a comparatively recent time, but the progress of the science of firearms is so rapid that no one can say but that my statistics may be old before you print your report of this talk. The ordinary soldier will fire twelve times as many shots per minute as he was able to do in 1870, and even this is likely to be rapidly improved upon. But you may take it that what with increased rapidity of fire, greater penetrative power, and the greater precision that the gun which the soldier will carry into the battle will possess, the rifle of to-morrow will be forty times as effective as the chassepot was in the Franco-Prussian war. Even the present gun is five times as deadly."

"But do not you think that with this rapid firing a soldier will spend all his ammunition and have none left?"

"There, again," said M. Bloch, "the improvement in firearms has enormously increased the number of cartridges which each man can carry into action. In 1877, when we went to war with Turkey, our soldiers could only carry 84 cartridges into action. When the calibre of the rifle was reduced to 5 mm. the number which each soldier was furnished with rose to 270. With a bullet of 4 mm. he will carry 380, and when we have a rifle of 3 mm. calibre he will be able to take 575 into action, and not have to carry any more weight than that which burdened him when he carried 84, twenty years ago. At present he carries 170 of the 7·62 mm."

"But we are a long way off 3 mm. calibre, are we not, M. Bloch?"

"Not so far. It is true that very many countries have not yet adopted so small a bore. Your country, for instance, has between $7\frac{1}{2}$ and 8 mm. The United States have adopted one with 6; Germany is contemplating the adoption of 5; but the 3 mm. gun will probably be the gun of the future, for the increased impetus of the small bore and its advantage in lightness will compel its adoption."

"You speak of the increased penetrative power of the bullet. Do you think this will add considerably to the deadliness of rifle-fire?"

"Oh, immensely," said M. Bloch. "As you contract the calibre of the gun you increase the force of its projectile. For instance, a rifle with a calibre of only 6·5 mm. has 44 per cent. more penetrative power than the shot fired by an 8.mm. rifle. Then, again, in previous wars, if a man could throw himself behind a tree he felt comparatively safe, even although the bullets were hurtling all round. To-day the modern bullet will pierce a tree without any difficulty. It also finds no obstacle in earthworks such as would have turned aside the larger bullets. There is therefore less shelter, and not only is there less shelter, but the excessive rapidity with which the missile travels (for it is absurd to call the slender projectile, no thicker than a lead pencil, a ball) will add enormously to the destructive power of the shot. Usually when a bullet struck a man, it found its billet, and generally stopped where it entered; but with the new bullet this will not be the case. At a near range it will pass through successive files of infantry, but what is more serious is that should it strike a bone, it is apt to fly upwards or sideways, rending and tearing everything through which it passes. The mortality will be much

greater from this source than it has been in the past."

"But is this not all very much theory? Have you any facts in support of your belief that the modern bullet will be so much more deadly than its predecessor? In England quite the opposite impression prevailed, owing to the experience which we gained in Jameson's raid, when many of the combatants were shot through and seemed none the worse, even although the bullet appeared to have traversed a vital part of the body."

M. Bloch replied: "I do not know about the Jameson raid. I do know what happened when the soldiers fired recently upon a crowd of riotous miners. It is true that they fired at short range, not more than thirty to eighty paces. The mob also was not advancing in loose formation, but, like most mobs, was densely packed. Only ten shots were fired, but these ten shots killed outright seven of the men and wounded twenty-five, of whom six afterwards died. Others who were slightly wounded concealed their injuries, fearing prosecution. Each shot, therefore, it is fair to estimate, must have hit at least four persons. But ignoring those unreported cases, there were thirty-two persons struck by bullets. Of these, thirteen died, a proportion of nearly 40 per cent., which is at least double the average mortality of persons hit by rifle-bullets in previous wars. It has also been proved by experiments made by firing shots into carcases and corpses, that when the bullet strikes a bone it acts virtually as an explosive bullet, as the point expands and issues in a kind of mushroom shape. Altogether I take a very serious view of the sufferings," continued M. Bloch, "and of the injury that will be inflicted by the new weapons."

"Is the improvement in the deadliness of weapons confined to small-arms? Does it equally extend to artillery firing?"

"There," said M. Bloch, "you touch upon a subject which I have dealt with at much length in my book. The fact is that if the rifle has improved, artillery has much more improved. Even before the quick-firing gun was introduced into the field batteries an enormous improvement had been made. So, indeed, you can form some estimate of the evolution of the cannon when I say that the French artillery to-day is held by competent authorities to be at least one hundred and sixteen times more deadly than the batteries which went into action in 1870."

"How can that be?" I asked. "They do not fire one hundred and sixteen times as fast, I presume?"

"No; the increased improvement has been obtained in many ways. By the use of range-finders it is possible now to avoid much firing into space which formerly prevailed. An instrument weighing about 60 lb. will in three minutes give the range of any distance up to four miles, and even more rapid range-finders are being constructed. Then, remember, higher explosives are used; the range has been increased, and even before quick-firing guns were introduced it was possible to fire two and a half times as fast as they did previously. The effect of artillery-fire to-day is at least five times as deadly as it was, and being two or three times as fast, you may reckon that a battery of artillery is from twelve to fifteen times as potent an instrument of destruction as it was thirty years ago. Even in 1870 the German artillerists held that one battery was able absolutely to annihilate any force advancing along a line of fire estimated at fifteen paces in breadth for a distance of over four miles.

"If that was so then, you can imagine how much more deadly it is now, when the range is increased and the explosive power of the shell has been enormously developed. It is estimated that if a body of 10,000 men, advancing to the attack, had to traverse a distance of a mile and a half under the fire of a single battery, they would be exposed to 1450 rounds before they crossed the zone of fire, and the bursting of the shells fired by that battery would scatter 275,000 bullets in fragments over the mile and a half across which they would have to march. In 1870 an ordinary shell when it burst broke into from nineteen to thirty pieces. To-day it bursts into 240. Shrapnel fire in 1870 only scattered thirty-seven death-dealing missiles. Now it scatters 340. A bomb weighing about 70 lb. thirty years ago would have burst into forty-two fragments. To-day, when it is charged with peroxilene, it breaks up into 1200 pieces, each of which is hurled with much greater velocity than the larger lumps which were scattered by a gunpowder explosion. It is estimated that such a bomb would effectively destroy all life within a range of 200 metres of the point of explosion. The artillery also benefits by the smokeless powder, although, as you can easily imagine, it is not without its drawbacks."

"What drawbacks?"

"The fact that the artillerymen can be much more easily picked off, when they are serving their guns, by sharp-shooters than was possible when they were enveloped in a cloud of smoke of their own creation. It is calculated that one hundred sharp-shooters, who would be quite invisible at a range of five hundred yards, would put a battery out of action in four minutes if they could get within range of one thousand yards. At a mile's

range it might take one hundred men half an hour's shooting to put a battery out of action. The most effective range for the sharp-shooter is about eight hundred paces. At this range, while concealed behind a bush or improvised earthwork, a good shot could pick off the men of any battery, or the officers, who could not avail themselves of the cover to which their men resort."

"How will your modern battle begin, M. Bloch?"

"Probably with attempts on outposts made by sharp-shooters to feel and get into touch with each other. Cavalry will not be of much use for that purpose. A mounted man offers too good a mark to a sharp-shooter. Then when the outposts have felt each other sufficiently to give the opposing armies knowledge of the whereabouts of their antagonists, the artillery duel will commence at a range of from four to five miles. As long as the artillery is in action it will be quite sufficient to render the nearer approach of the opposing forces impossible. If they are evenly matched, they will mutually destroy each other, after inflicting immense losses before they are put out of action. Then the turn of the rifle will come. But the power of rifle-fire is so great that it will be absolutely impossible for the combatants to get to close quarters with each other. As for any advance in force, even in the loosest of formations, on a front that is swept by the enemies' fire, that is absolutely out of the question. Flank movements may be attempted, but the increased power which a magazine rifle gives to the defence will render it impossible for such movements to have the success that they formerly had. A small company can hold its own against a superior attacking force long enough to permit of the bringing up of reinforcements. To attack any position successfully, it is estimated that the attack-

ing force ought to outnumber the assailants at least by 8 to 1. It is calculated that 100 men in a trench would be able to put out of action 336 out of 400 who attacked them, while they were crossing a fire-zone only 300 yards wide."

"What do you mean by a fire-zone?"

"A fire-zone is the space which is swept by the fire of the men in the trench."

"But you assume that they are entrenched, M. Bloch?"

"Certainly, everybody will be entrenched in the next war. It will be a great war of entrenchments. The spade will be as indispensable to a soldier as his rifle. The first thing every man will have to do, if he cares for his life at all, will be to dig a hole in the ground, and throw up as strong an earthen rampart as he can to shield him from the hail of bullets which will fill the air."

"Then," I said, "every battlefield will more or less come to be like Sebastopol, and the front of each army can only be approached by a series of trenches and parallels?"

"Well, that, perhaps, is putting it too strongly," said M. Bloch, "but you have grasped the essential principle, and that is one reason why it will be impossible for the battle of the future to be fought out rapidly. All digging work is slow work, and when you must dig a trench before you can make any advance, your progress is necessarily slow. Battles will last for days, and at the end it is very doubtful whether any decisive victory can be gained."

"Always supposing," I said, "that the ammunition does not give out."

"Ammunition will not give out. Of powder and shot there is always plenty."

"I doubt that," I replied. "The weak point of all this argument as to the impossibility of war implies that the modern mechanism of war, which is quite sufficient to prevent armies coming into close contact, also possesses qualities of permanence, or rather of inexhaustibility. What seems much more probable is that with the excessive rapidity of fire, armies will empty their magazines, and the army that fires its last cartridge first will be at the mercy of the other. Then the old veteran Dragomiroff will rejoice, for the bayonet will once more come into play."

M. Bloch shook his head.

"I do not think that armies will run short of ammunition. All my arguments are based upon the assumption that the modern war is to be fought with modern arms. I do not take into account the possibility that there will be a reversion to the primitive weapons of an earlier day."

"Well, supposing that you are right, and that ammunition does not run short, what will happen?"

"I have quoted in my book," said M. Bloch, "the best description that I have ever seen of what may be expected on a modern battlefield. I will read it to you, for it seems to convey, more vividly than anything that I could say, just what we may expect:—

"The distance is 6000 metres from the enemy. The artillery is in position, and the command has been passed along the batteries to 'give fire.' The enemy's artillery replies. Shells tear up the soil and burst; in a short time the crew of every gun has ascertained the distance of the enemy. Then every projectile discharged bursts in the air over the heads of the enemy, raining down hundreds

of fragments and bullets on his position. Men and horses are overwhelmed by this rain of lead and iron. Guns destroy one another, batteries are mutually annihilated, ammunition cases are emptied. Success will be with those whose fire does not slacken. In the midst of this fire the battalions will advance.

"Now they are but 2000 metres away. Already the rifle-bullets whistle round and kill, each not only finding a victim, but penetrating files, ricocheting, and striking again. Volley succeeds volley, bullets in great handfuls, constant as hail and swift as lightning, deluge the field of battle.

"The artillery having silenced the enemy is now free to deal with the enemy's battalions. On his infantry, however loosely it may be formed, the guns direct thick iron rain, and soon in the position of the enemy the earth is reddened with blood.

"The firing lines will advance one after the other, battalions will march after battalions; finally the reserves will follow. Yet with all this movement in the two armies there will be a belt a thousand paces wide, separating them as by neutral territory, swept by the fire of both sides, a belt which no living being can stand for a moment. The ammunition will be almost exhausted, millions of cartridges, thousands of shells will cover the soil. But the fire will continue until the empty ammunition cases are replaced with full.

"Melinite bombs will turn to dust farmhouses, villages, and hamlets, destroying everything that might be used as cover, obstacle, or refuge.

"The moment will approach when half the combatants will be mowed down, dead and wounded will lie in parallel rows, separated one from the other by that belt of a

thousand paces which will be swept by a cross fire of shells which no living being can pass.

"The battle will continue with ferocity. But still that thousand paces unchangingly separate the foes.

"Who shall have gained the victory? Neither.

"This picture serves to illustrate a thought which, since the perfection of weapons, has occupied the minds of all thinking people. What will take place in a future war? Such are constrained to admit that between the combatants will always be an impassable zone of fire deadly in an equal degree to both the foes.

"With such conditions, in its application to the battles of the future, the saying of Napoleon seems very questionable: 'The fate of battle is the result of one minute, of one thought, the enemies approach with different plans, the battle becomes furious; the decisive moment arrives, and a happy thought sudden as lightning decides the contest, the most insignificant reserve sometimes being the instrument of a splendid victory.'

"It is much more probable that in the future both sides will claim the victory."

"Pleasant pictures, certainly; and if that authority is right, you are indeed justified in believing that there will be no decisive battles in the war of the future."

"There will be no war in the future," said M. Bloch; "for it has become impossible, now that it is clear that war means suicide."

"But is not everything that you are saying an assumption that people will make war, and that therefore war itself *is* possible?"

"No doubt," said M. Bloch; "the nations may endeavour to prove that I am wrong, but you will see what will

happen. Nothing will be demonstrated by the next war if it is made, in spite of warnings, but the impossibility of making war, except, of course, for the purpose of self-destruction. I do not for a moment deny that it is possible for nations to plunge themselves and their neighbours into a frightful series of catastrophes which would probably result in the overturn of all civilised and ordered government. That is, of course, possible; but when we say that war is impossible we mean that it is impossible for the modern State to carry on war under the modern conditions with any prospect of being able to carry that war to a conclusion by defeating its adversary by force of arms on the battlefield. No decisive war is possible. Neither is any war possible, as I proceed to show, that will not entail, even upon the victorious Power, the destruction of its resources and the break-up of society. War therefore has become impossible, except at the price of suicide. That would, perhaps, be a more accurate way of stating the thesis of my book."

"I understand; but do you think you have proved this?"

"Certainly," said M. Bloch. "So far I have only spoken about the improvements that have been wrought in two branches of the service, viz., in the magazine rifle and the greater efficiency of artillery. Taken by themselves, they are sufficiently serious to justify grave doubt as to whether or not we have not reached a stage when the mechanism of slaughter has been so perfected as to render a decisive battle practically impossible; but these two elements are only two. They are accompanied by others which are still more formidable to those who persist in contemplating war as a practical possibility."

"To what are you referring?" I asked.

"Chiefly to the immensity of the modern army. The war of 1870–71 was a contest of giants, but the German armies operating in France did not exceed half a million men, whereas if war were to break out to-day, the Germans would concentrate over a million men on their front, while the French would be no whit behind them in the energy with which they would concentrate all their available fighting men on the frontier. In a war between the Triple and the Dual Alliance there would be ten millions of men under arms."

"How would you make up the total of ten millions which you say would be mobilised in case of a war between the Dual and Triple Alliance?"

"The figures in millions are briefly: Germany, 2,500,000; Austria, 1 3–10ths millions; Italy, 1 3–10ths millions, making a total of 5,100,000 for the Triple Alliance. France would mobilise 2½ millions, and Russia 2,800,000, making 5,300,000—10,400,000. It has yet to be proved that the human brain is capable of directing the movements and providing for the sustenance of such immense masses of human beings. The unwieldiness of the modern army has never been adequately taken into account. Remember that those millions will not be composed of veterans accustomed to act together. More than half of the German and French troops which will be confronting each other on mobilisation in case of war will be drawn from the reserves. In Russia the proportion of reserves would be only three hundred and sixty, in Italy two hundred and sixty, per thousand; but even this proportion is quite sufficient to indicate how large a mass of men, comparatively untrained, would find their place in the fighting front."

"But have not great generals in the past commanded

armies of millions?—Xerxes, for instance, and Tamerlane, and Attila at the head of his Huns?"

"No doubt," said M. Bloch, "that is quite true; but it is one thing to direct a horde of men living in the simplest fashion, marching shoulder to shoulder in great masses, and it is an altogether different thing to manœuvre and supply the enormously complex machine which we call a modern army. Remember, too, that in the old days men fought in masses, whereas the very essence of modern war is that you must advance in loose order and never have too big a clump of soldiers for your enemy to fire at. Hence the battle will be spread over an enormous front, and every mile over which you spread your men increases the difficulties of supply, of mutual co-operation, and of combined effort."

"But has not the training of officers kept pace with the extension and development of modern armaments?"

"Yes," said M. Bloch, "and no. It is true, no doubt, that an effort has been made to bring up the technical training of officers to the necessary standard; but this is quite impossible in all cases. A very large proportion of the officers who will be in command in a general mobilisation would be called from the reserve, that is to say, they would be men who are not familiar with the latest developments of modern tactics, and who would find themselves suddenly called upon to deal with conditions of warfare that were almost as different from those with which they were trained to deal as the legionaries of Cæsar would have been if they had been suddenly summoned to face the musketeers of Frederic the Great."

"Is that not an exaggeration, M. Bloch? Do you think that the art of war has changed so much?"

"Changed?" said M. Bloch; "it has been so thoroughly

revolutionised in the last thirty years, that if I had a son who was preparing for a military career, I would not let him read a book on tactics or strategy that had not been written in the last fifteen years, and even then he would find that great changes had taken place within that period. It is simply appalling to contemplate the spectacle of millions of men, half of whom have been hurriedly summoned from the field, the factory, and the mine, and the whole placed under command of officers not one in a hundred of whom has ever been under fire, and half of whom have been trained in a more or less antiquated school of tactics. But even then that is not the worst. What we have to recognise is the certainty that even if all officers were most efficient when the war began, the war would not last many weeks before the majority of the officers had been killed off."

"But why?" I said.

"The percentage of officers killed and wounded in action was much greater even in 1870 than the proportion of privates killed and wounded. The Germans, for instance, lost two officers killed and three wounded to each private who was similarly disabled. But that was before the improved weapon came into play. In the Chilian war the proportion of officers killed was 23 per cent. and 75 per cent. wounded, whereas among the men only 13 per cent. were killed and 60 per cent. wounded."

"To what do you attribute this?" I asked.

"The cause is very simple. The officers are compelled to expose themselves much more than the men under their orders. They have to be up and about and moving, while the men are lying in the shelter of the trenches. This is so well recognised that every Continental army pays special attention to the training of sharp-shooters,

whose word of command is that they should never waste a shot upon any one but an officer. Hence the general conviction on the part of the officers abroad that if the great war broke out they would never survive to see the conclusion of peace."

"When I was in Paris, M. Bloch, that conviction did not seem to be very general on the part of the French officers."

"It is different in Germany," said M. Bloch, "and in Austria-Hungary, and the French would not be long in finding it out. Again and again officers have said to me that while they would of course do their duty if they were ordered to the front, they would take their place at the head of their men knowing that they would never return. So general is this conviction that you will find very little trace of any war party among the officers in Germany. They know too well what war would mean to them. But I am not thinking so much of the fate of the individuals as the result which will inevitably follow when this massed million of men found themselves deprived of their commanders.

"An army is a very highly specialised organisation. Without competent officers, accustomed to command, it degenerates into a mere mob, and of all things in the world nothing is so helpless as a mob. It can neither march, fight, manœuvre, nor feed itself. An army without leaders is not only a mob, but it is apt to degenerate into a very cowardly mob. Remember that every man is not naturally brave. It was said long ago that a very good fighting army consisted of three sorts of soldiers: only one-third of the men in the ranks were naturally brave, another third were naturally cowards, while the last third was capable of being brave under

circumstances when it was well led and kept up to its work. Take away the officers, and this middle third naturally gravitate to the cowardly contingent, with results which have been seen on many a stricken field. Hence, under modern conditions of warfare every army will tend inevitably to degenerate into such a mob. It is for those practical military men who persist in regarding war as a possibility to explain how they hope to overcome the difficulty created by the very magnitude and unwieldiness of the machine which they have created."

"But do not you think, M. Bloch, that if the nations discover that their armies are too big to be used, they will only fight with such manageable armies as they can bring to the front, manœuvre, feed, and supply with the munitions of war?"

M. Bloch shook his head. "The whole drift and tendency of modern tactics," he said, "is to bring up the maximum number of men to the front in the shortest possible loss of time and to hurl them in the largest possible numbers upon the enemy's position. It is absolutely necessary, if you take the offensive, to have a superior force. It is from a military point of view an impossibility to attack a superior force with an inferior, and the effect of the improvement in modern weapons has been to still further enhance the necessity for superiority of force in attacking. There will, therefore, be no question of fighting with small armies. The largest possible force will be brought to the front, and this effort will inevitably result in the breakdown of the whole machine.

"You must have the maximum ready to hand at the beginning. Remember the fighting force of an army

weakens with every mile that it advances from its base Napoleon entered Russia with 400,000 men; but although he had only fought one battle, he had only 130,000 men with him when he entered Moscow. The Germans, when they were in France, employed one-sixth of their infantry in covering their communications and defending their rear. This proportion is likely to be much increased in future wars. The opportunity for harassing the line of communications in the rear of an invading army has been enormously multiplied by the invention of smokeless powder. The *franc tireur* in the Franco-German war took his life in his hand, for the range of his gun was not very great in the first place, and in the second his whereabouts was promptly detected by the puff of smoke which showed his hiding-place. Now the whole line of communications will be exposed to dropping shots from marksmen who, from the security of thicket or hedge, will deal out sudden death without any tell-tale smoke to guide their exasperated and harassed enemy to the hiding-place.

"I have now dealt," said M. Bloch, "with the difficulties in the way of modern war, arising first from the immense improvement that has been wrought in the mechanism of slaughter, and secondly with the unmanageability of the immense masses of men who will be mobilised at the outbreak of war. Let us now proceed to the third, and what to my mind constitutes far the most serious obstacle in the way of modern war—viz., the economic impossibility of waging war upon the scale on which it must be waged if it is waged at all.

"The first thing to be borne in mind is that the next war will be a long war. It was the declared opinion of Moltke that the altered conditions of warfare

rendered it impossible to hope that any decisive result could be arrived at before two years at the least. The Franco-German war lasted seven months, but there is no hope of any similar war being terminated so rapidly. Of course this is assuming that war is to be terminated by fighting. In reality the war of the future, if ever it takes place, will not be fighting; it will be terminated by famine."

"Why should wars be so excessively prolonged?"

"Because all wars will of necessity partake of the character of siege operations. When we invaded Turkey in 1877 we were detained for months behind the improvised earthworks of Plevna. If war were to break out in Europe to-day, each combatant would find itself confronted, not by an isolated and improvised Plevna, but by carefully prepared and elaborately fortified networks of Plevnas. It is so on all frontiers. The system of defence has been elaborated with infinite skill and absolute disregard of financial considerations. Whether it will be a German army endeavouring to make its way into Moscow and St. Petersburg, or a Russian army striking at Berlin or at Vienna, or a German army invading France—in every case the invading army would find itself confronted by lines upon lines of fortresses and fortified camps, behind which would stand arrayed forces equal or superior in number to those which it could bring into the field against them. These fortresses would have to be taken or masked.

"Now it is calculated that to take a modern fortress adequately defended, even by superior forces, is an operation which cannot be put through in less than one hundred and twenty days—that is, supposing that everything goes well with the assailants. Any reverse or any interruption

of the siege operations would, of course, prolong this period. But it is not merely that each fortress would have to be reduced, but every field would more or less become an improvised fortified camp. Even when an army was defeated it would retreat slowly, throwing up earthworks, behind which it would maintain a harassing fire upon its pursuers; and the long line of invisible sharp-shooters, whose presence would not be revealed even by the tell-tale puff of smoke, would inevitably retard any rapid advance on the part of the victors. It is indeed maintained by many competent authorities that there is no prospect of the victorious army being able to drive the defeated forces from the field of battle so completely as to establish itself in possession of the spoils of war. The advantage is always with the defending force, and every mile that the assailants advance from their base would increase their difficulties and strengthen their opponents. Long and harassing siege operations in a war of blockade would wear out the patience and exhaust the resources of armies."

"But armies have stood long sieges before now," I objected.

"Yes," said M. Bloch, "in the past; but we are talking of the future. Do not forget that the wear and tear would be terrible, and the modern man is much less capable of bearing it than were his ancestors. The majority of the population tends more and more to gravitate to cities, and the city dweller is by no means so capable of lying out at nights in damp and exposed positions as the peasant. Even in comparatively rapid campaigns sickness and exhaustion slay many more than either cold steel or rifle-bullets. It is inevitable that this should be the case. In two weeks' time after the French

army is mobilised, it is the expectation of the best authorities that they would have 100,000 men in hospital, even if never a shot had been fired."

"That I can well understand. I remember when reading Zola's 'La Debâcle' feeling that if the Germans had kept out of the way altogether and had simply made the French march after them hither and thither, the whole Napoleonic army would have gone to pieces before they ever came within firing distance of their foes."

"Yes," said M. Bloch. "The strain of marching is very heavy. Remember that it is not mere marching, but marching under heavy loads. No infantry soldier should carry more than one-third of his own weight; but instead of the average burden of the fully accoutred private being 52 lb. it is nearer 80 lb., with the result that the mere carrying of weight probably kills more than fall in battle. The proportion of those who die from disease and those who lose their lives as the consequence of wounds received in fighting is usually two or three to one. In the Franco-German war there were four times as many died from sickness and exhaustion as those who lost their lives in battle. In the Russo-Turkish war the proportion was as 16 to 44. In the recent Spanish war in Cuba the proportion was still greater. There were ten who died from disease for one who fell in action. The average mortality from sickness tends to increase with the prolongation of the campaign. Men can stand a short campaign, but when it is long it demoralises them, destroys the spirit of self-sacrifice which sustained them at the first in the opening weeks, and produces a thoroughly bad spirit which reacts upon their physical health. At present there is some regard paid to humanity, if only by the provision

of ambulances, and the presence of hospital attendants, nurses, and doctors. But in the war of the future these humanities will go the wall."

"What!" I said, "do you think there will be no care for the wounded?"

"There will be practically no care for the wounded," said M. Bloch, "for it will be impossible to find adequate shelter for the Red Cross hospital tent or for the hospital orderlies. It will be impossible to take wounded men out of the zone of fire without exposing the Red Cross men to certain death. The consequence is they will be left to lie where they fall, and they may lie for days. Happy they will be if they are killed outright. Why, even in the last great war the provision for attendance on the wounded was shamefully inadequate. After Gravelotte there were for some time only four doctors to attend to 10,000 wounded men, and the state of things after Sadowa was horrible in the extreme. It is all very well to inveigh against this as inhumanity, but what are you to do when in the opinion of such a distinguished army physician as Dr. Billroth it would be necessary to have as many hospital attendants as there are soldiers in the fighting line? What is much more likely to be done is that the dying and the dead will be utilised as ramparts to strengthen the shelter trenches. This was actually done at the battle of Worth, where Dr. Porth, chief military physician of the Bavarian army, reported that he found in some places in the battlefield veritable ramparts built up of soldiers who had fallen by the side of their comrades, and in order to get them out of the way they had piled them one upon the top of the other, and had taken shelter behind their bodies. Some of these unfortunates built into this terrible rampart were only wounded, but the

pressure of the superincumbent mass soon relieved them from their sufferings."

"What a horrible story!"

"Yes," said M. Bloch; "but I believe that war will be decided not by these things—not even by fighting-men at all, but by the factors of which they at present take far too little account."

"And what may those factors be?" I asked.

"Primarily, the quality of toughness or capacity of endurance, of patience under privation, of stubbornness under reverse and disappointment. That element in the civil population will be, more than anything else, the deciding factor in modern war. The men at the front will very speedily be brought to a deadlock. Then will come the question as to how long the people at home will be able to keep on providing the men at the front with the necessaries of life. That is the first factor. The second factor, which perhaps might take precedence of the moral qualities, is whether or not it is physically possible for the population left behind to supply the armies in front with what they need to carry on the campaign."

"But have they not always done it in the past?"

M. Bloch shook his head impatiently. "What is the use of talking about the past when you are dealing with an altogether new set of considerations? Consider for one moment what nations were a hundred years ago and what they are to-day. In those days before railways, telegraphs, steamships, &c., were invented, each nation was more or less a homogeneous, self-contained, self-sufficing unit. Europe was built in a series of water-tight compartments. Each country sufficed for its own needs, grew its own wheat, fattened its own cattle, supplied itself for its own needs within its own frontiers. All that is

changed; with the exception of Russia and Austria there is not one country in Europe which is not absolutely dependent for its beef and its bread supplies from beyond the frontiers. You, of course, in England are absolutely dependent upon supplies from over sea. But you are only one degree worse off than Germany in that respect. In 1895, if the Germans had been unable to obtain any wheat except that which was grown in the Fatherland, they would have lacked bread for one hundred and two days out of the three hundred and sixty-five. Every year the interdependence of nations upon each other for the necessaries of life is greater than it ever was before. Germany at present is dependent upon Russia for two and a half months' supply of wheat in every year. That supply would, of course, be immediately cut off if Russia and Germany went to war; and a similar state of things prevails between other nations in relation to other commodities. Hence the first thing that war would do would be to deprive the Powers that made it of all opportunity of benefiting by the products of the nations against whom they were fighting."

"Yes," I objected, "but the world is wide, and would it not be possible to obtain food and to spare from neutral nations?"

"That assumes," said M. Bloch, "first that the machinery of supply and distribution remains unaffected by war. Secondly, that the capacity for paying for supplies remains unimpaired. Neither of those things is true. For you, of course, it is an absolute necessity that you should be able to bring in food from beyond the seas; and possibly with the aid of your fleet you may be able to do it, although I fear the rate of war premium will materially enhance the cost of the cargoes. The

other nations are not so fortunate. It was proposed some time ago, I know, in Germany, that in case of war they should endeavour to replace the loss of Russian wheat by importing Indian wheat through the Suez Canal—an operation which in the face of the French and Russian cruisers might not be very easy of execution. But even supposing that it was possible to import food, who is to pay for it? And that is the final crux of the whole question."

"But," again I objected, "has the lack of money ever prevented nations going to war? I remember well when Lord Derby, in 1876, was quite confident that Russia would never go to war on behalf of Bulgaria because of the state of the Russian finances; but the Russo-Turkish war took place all the same, and there have been many great wars waged by nations which were bankrupt, and victories won by conquerors who had not a coin in their treasury."

"You are always appealing to precedents which do not apply. Modern society, which is organised on a credit basis, and modern war, which cannot be waged excepting at a ruinous expenditure, offer no points of analogy compared with those times of which you speak. Have you calculated for one moment what it costs to maintain a soldier as an efficient fighting man in the field of battle? The estimate of the best authorities is that you cannot feed him and keep him going under ten francs a day—say, eight shillings a day. Supposing that the Triple and Dual Alliance mobilise their armies, we should have at once confronting us an expenditure for the mere maintenance of troops under arms of £4,000,000 a day falling upon the five nations. That is to say, that in one year of war under modern conditions the Powers would spend

£1,460,000,000 sterling merely in feeding their soldiers, without reckoning all the other expenses that must be incurred in the course of the campaign. This figure is interesting as enabling us to compare the cost of modern wars with the cost of previous wars. Take all the wars that have been waged in Europe from the battle of Waterloo down to the end of the Russo-Turkish war, and the total expenditure does not amount to more than £1,250,000,000 sterling, a colossal burden no doubt, but one which is nearly £200,000,000 less than that which would be entailed by the mere victualling of the armies that would be set on foot in the war which we are supposed to be discussing. Could any of the five nations, even the richest, stand that strain?"

"But could they not borrow and issue paper money?"

"Very well," said M. Bloch, "they would try to do so, no doubt, but the immediate consequence of war would be to send securities all round down from 25 to 50 per cent., and in such a tumbling market it would be difficult to float loans. Recourse would therefore have to be had to forced loans and unconvertible paper money. We should be back to the days of the assignats, a temporary expedient which would aggravate the difficulties with which we have to deal. Prices, for instance, would go up enormously, and so the cost, 8s. a day, would be nearer 20s. if all food had to be paid for in depreciated currency. But, apart from the question of paying for the necessary supplies, it is a grave question whether such supplies could be produced, and if they could be produced, whether they could be distributed."

"What do you mean by 'distributed'?" I asked.

"Distributed?" said M. Bloch. "Why, how are you to get the food into the mouths of the people who want it

if you had (as you would have at the beginning of the war) taken over all the railways for military purposes? Even within the limits of Germany or of Russia there would be considerable difficulty in securing the transit of food-stuffs in war time, not merely to the camps, but to the great industrial centres. You do not seem to realise the extent to which the world has been changed by the modern industrial system. Down to the end of the last century the enormous majority of the population lived in their own fields, grew their own food, and each farm was a little granary. It was with individuals as it was with nations, and each homestead was a self-contained, self-providing unit. But nowadays all is changed. You have great industrial centres which produce absolutely nothing which human beings can eat. How much, for instance, do you grow in the metropolitan area for the feeding of London? Everything has to be brought by rail or by water to your markets. So it is more or less all over the Continent, especially in Germany and France. Now it so happens (and in this I am touching upon the political side of the question) that those districts which produce least food yield more Socialists to the acre than any other part of the country. It is those districts, rife with all elements of political discontent, which would be the first to feel the pinch of high prices and of lack of food. But this is a matter on which we will speak later on."

"But do you think," I said, "that the railways would be so monopolised by the military authorities that they could not distribute provisions throughout the country?"

"No," said M. Bloch. "It is not merely that they would be monopolised by their military authorities, but that they would be disorganised by the mobilisation of troops. You forget that the whole machinery of distribu-

tion and of production would be thrown out of gear by mobilisation; and this brings me to the second point upon which I insist—viz., the impossibility of producing the food. At the present moment Germany, for instance, just manages to produce sufficient food to feed her own population, with the aid of imports from abroad, for which she is able to pay by the proceeds of her own industry. But in the case of war with Russia she would not be able to buy two and a half months' supply of wheat from Russia, and therefore would have to pay much more for a similar supply of food in the neutral markets, providing she could obtain it. But she would have to buy much more than two and a half months' from Russia, because the nine months' corn which she produces at present is the product of the whole labour of all her able-bodied agricultural population; and how they work you in England do not quite realise. Do you know, for instance, that after the 'Büsstag,' or day of penitence and prayer, at the beginning of what we call the farmers' year or summer season, the whole German agricultural population in some districts work unremittingly fifteen hours a day seven days a week, without any cessation, without Sundays or holidays, until the harvest is gathered in; and even with all that unremitting toil they are only able to produce nine months' supply of grain. When you have mobilised the whole German army, you will diminish at least by half the strong hands available for labour in the field. In Russia we should not, of course, be in any such difficulty, and in the scrupulous observance of Sunday we have a reserve which would enable us to recoup ourselves for the loss of agricultural labour. We should lose, for instance, 17 per cent. of our peasants; but if those who were left worked on Sunday, in addition

to weekdays, we should just be able to make up for the loss of the men who were taken to war. Germany has no such reserves, nor France ; and hence it is that, speaking as a political economist, I feel extremely doubtful as to whether it would be possible for either Germany or France to feed their own population, to say nothing of their own soldiers, when once the whole machine of agricultural production had been broken up by the mobilisation *en masse* of the whole population."

"But has this point never been considered by the sovereigns and statesmen of Europe ?" I inquired.

"You know," replied M. Bloch, "how it is with human beings. We shall all die, but how few care to think of death ? It is one of the things inevitable which no one can alter by taking thought. So it is with this question. War once being regarded as unavoidable, the rulers shut their eyes to its consequences. Only once in recent history do I remember any attempt on the part of a European Government gravely to calculate the economic consequences of war under modern conditions. It was when M. Burdeau was in the French Ministry. He appointed a committee of economists for the purpose of ascertaining how the social organism would continue to function in a time of war, how from day to day their bread would be given to the French population. But no sooner had he begun his investigation than a strong objection was raised by the military authorities, and out of deference to their protests the inquiry was indefinitely suspended. Hence we are going forward blindfold, preparing all the while for a war without recognising the fact that the very fundamental first condition of being able to wage it does not exist. You might as well prepare for a naval war without being sure that you have a sea in

which your ships can float as to continue to make preparations for a land war unless you have secured in advance the means by which your population shall live. Every great State would in time of war be in the position of a besieged city, and the factor which always decides sieges is the factor which will decide the modern war. Your soldiers may fight as they please; the ultimate decision is in the hands of *famine*."

"Well, it is an old saying that 'armies always march upon their bellies,'" said I. "'Hunger is more terrible than iron, and the want of food destroys more armies than battles,' was a saying of the first Napoleon, which holds good to-day."

"But," interrupted M. Bloch, "I am not speaking so much of the armies, I am speaking of the population that is behind the armies, which far outnumbers the armies and which is apt to control the policy of which the armies are but the executive instrument. How long do you think the populations of Paris or of Berlin or of the great manufacturing districts in Germany would stand the doubling of the price of their food, accompanied, as it would be, by a great stagnation of industry and all the feverish uncertainty and excitement of war?

"What is the one characteristic of modern Europe? Is it not the growth of nervousness and a lack of phlegmatic endurance, of stoical apathy? The modern European feels more keenly and is much more excitable and impressionable than his forefathers. Upon this highly excitable, sensitive population you are going to inflict the miseries of hunger and all the horrors of war. At the same time you will enormously increase their taxes, and at the same time also you will expose your governing and directing classes to more than decimation at the hands of the enemy's sharp-

shooters. How long do you think your social fabric will remain stable under such circumstances? Believe me, the more the ultimate political and social consequences of the modern war are calmly contemplated, the more clearly will it be evident that if war is possible it is only possible, as I said before, at the price of suicide."

"From which, therefore, it follows, in your opinion, M. Bloch, that the Peace Conference has not so much to discuss the question of peace as to inquire into whether or not war is possible?"

"A committee of experts, chosen from the ablest representatives of the Powers sent to the Hague," replied M. Bloch, "would have very little difficulty in coming to a conclusion upon the facts which I have just set forth in my book. Those experts might be soldiers and political economists, or the inquiry might be divided into two heads, and the two questions relegated to different committees of specialists. I am quite sure that, as the result of such a dispassionate international investigation into the altered conditions of the problem, they could only arrive at one conclusion—viz., that the day when nations could hope to settle their disputes by appealing to the arbitrament of war has gone by: first, because from that tribunal no definite decision can speedily be secured; and secondly, the costs of the process are ruinous to both the suitors."

"It is rather a happy idea, that of yours, M. Bloch," said I, "that of the last Court of Appeal of nations having broken down by the elaboration of its own procedure, the excessive costliness of the trial, and, what is much more serious than anything else, the impossibility of securing a definite verdict. Hitherto the great argument in favour of war is that it has been a tribunal capable of giving unmistakably a decision from which there was no appeal."

"Whereas, according to my contention," said M. Bloch, "war has become a tribunal which by the very perfection of its own processes and the costliness of its methods can no longer render a decision of any kind. It may ruin the suitors, but the verdict is liable to be indefinitely postponed.

"Therefore the ultimate Court of Appeal having broken down," I said, "it is necessary to constitute another, whose proceedings would not be absolutely inconsistent with economic necessity or with the urgent need for prompt and definite decision. But if this be admitted, what immense world-wide consequences would flow from such a decision."

"Yes," said M. Bloch, "the nations would no longer go on wasting £250,000,000 sterling every year in preparing to wage a war which can only be waged at the price of suicide, that is to say, which cannot be waged at all, for no nation willingly commits suicide. Then we may hope for some active effort to be made in the direction of ameliorating the condition of the people. The fund liberated from the war-chest of the world could work marvels if it were utilised in the education of the people. At present, as you will see from the tables which I have compiled in my book, the proportion of money spent on education compared with that spent on war is very small. In Russia, for instance, we have an immense deal to do in that direction. In some provinces no fewer than 90 per cent. of the recruits are illiterate. In fact, as you will see from what I have written, I have been as much attracted to this subject from the desire to improve the condition of the people as from any other source. Hence my book took in part the shape of an investigation of the moral, social, and material conditions in which the masses

of the Russian peasants pass their lives. It is a painful picture, and one that cannot fail profoundly to touch the hearts of all those who have followed the results of my investigation. The condition of the mass of the people in every country leaves much to be desired, but especially is this the case in my own country, where the resources of civilisation have hardly been drawn upon for the improvement of the condition of the peasants."

"Yet, M. Bloch, I think I gather from you that Russia was better able to support a war than more highly organised nations."

"You are quite right," said M. Bloch. "It is true that Russia can, perhaps better than all other countries, contemplate the dangers or impossibilities of modern war; but that is precisely because she is not so highly organised and so advanced or developed in civilisation as her neighbours. Russia is the only country in Europe which produces sufficient food for her own people. She is not only able to produce enough grain to feed her own people, but she exports at present four millions of tons every year. A war which stopped the export trade would simply place this immense mass of food at the disposal of our own people, who would be more in danger of suffering from a plethora of food than from a scarcity. But nevertheless, although this is the case, the very backwardness of Russia renders it more important that she should avoid exposing her nascent civilisation to the tremendous strain of a great war. Practically we may be invulnerable, but if, when having beaten back our invaders, we were to endeavour in turn to carry the war across our frontiers, we should find ourselves confronted by the same difficulties which make offensive war increasingly difficult, not to say impossible. Neither is there any conceivable territorial or political

result attainable by force of arms here or in Asia which would be any adequate compensation for the sacrifices which even a victorious war would entail."

"All this may be true, but nations do not always count the cost before going to war."

"No," said M. Bloch; "if they did, they would very seldom go to war. Take, for instance, the civil war in the United States of America. According to some calculations it would have cost the United States four milliards of francs, that is to say £160,000,000 sterling, to have bought up all their slaves at £200 a head, and emancipated them. Instead of taking that method of solving a dangerous and delicate problem, they appealed to the sword, with the result that it is estimated that the war occasioned the country losses of one kind and another amounting to twenty-five milliards of francs, or £1,000,000,000 sterling, to say nothing of all the bloodshed and misery entailed by that war. The cost of emancipation thus ciphered out at £1200 a head per slave instead of £200 per head, at which the bargain could easily have been arranged. The economic condition of our peasants in many of our provinces," continued M. Bloch, "is heartrending. Their ignorance, their innocence, their simplicity, render them an easy prey to money-lenders, who have in many cases succeeded in establishing a veritable system of slave labour."

"How could that be?" I asked. "The serfs were emancipated in 1861."

"Yes," said M. Bloch, "they were emancipated, but their emancipation without education left them an easy prey to the Kulaks, who advance money upon their labour. A peasant, for instance, has to pay his taxes, say, in winter time, and the Kulak will advance the twenty or thirty

roubles which he may have to pay in return for what is called his 'summer labour.' The price of labour in Russia in summer is twice or thrice as much as it is in winter. The Kulak buys the summer labour at the winter rates, and then having purchased in advance the summer labour of the unfortunate peasant, he collects his chattels in droves and farms them out wherever he can dispose of them. It is veritable slavery. But even this is less terrible than that which can be witnessed in some provinces, where parents sell their children to speculators, who buy them up and send them to St. Petersburg and Moscow as calves are sent to market, where they are sold out for a term of years as apprentices to those who have no scruples against securing cheap labour on those terms.

"No one who has seen anything of the squalor and wretchedness, the struggle with fever and famine, in the rural districts of Russia, especially when there has been a failure of harvest, can be other than passionate to divert for the benefit of the people some of the immense volume of wealth that is spent in preparing for this impossible war. The children of most Russian peasants come into the world almost like brute beasts, without any medical or skilled attendance at childbirth, and they are brought up hard in a way that fortunately you know little of in wealthy England. Can you imagine, for instance," said M. Bloch, speaking with great fervour and feeling, "the way in which infants are left inside the home of most Russian peasants, whose mothers have to leave them to labour in the fields? The child is left alone to roll about the earthen floor of the hut, and as it will cry for hunger, poultices of chewed black bread are tied round its hands and feet, so that the little creature may have something to suck at until its mother comes back from the fields. At every stage in

life you find the same deplorable lack of what more prosperous nations regard as indispensable to human existence. In some provinces we have only thirty-seven doctors per million inhabitants, and as for nurses, schoolmasters, and other agents of civilisation, there are whole vast tracts in which they are absolutely unknown. All this makes our population hardy, no doubt—those who survive; but the infant mortality is frightful, and the life which the survivors lead is very hard and sometimes very terrible."

"The contrasts between the vital statistics of Russia and of France are, I suppose, about as wide as could be imagined."

"Yes," said M. Bloch. "But although the French system of limiting the family and keeping infant mortality down to a minimum has some great advantages, it has great disadvantages. In a limited family much greater pains are taken to preserve the life of the sickly children. Hence, instead of allowing them to be eliminated by natural process, whereby the race would be preserved from deterioration, they are sedulously kept alive, and the vitality of the nation is thereby diminished. In other respects our Russian people are very different from what you imagine. For instance, it may surprise you, but it is undoubtedly true, that the amount of spirit consumed by our people is very much less per head than that which is drunk in England, and also that the number of illegitimate births in Russia is lower per thousand than in an other country in Europe. This is due to the prevalence of early marriages, for our people marry so early that when our young men are taken for the army from 30 to 60 per cent. are married before they enter the ranks. You may smile," said M. Bloch, "at me for thinking that those questions

must be considered in a discussion of the future war; but it is the moral stamina of a population which will ultimately decide its survival, and I therefore could not exclude the discussion of all the elements which contribute to the well-being of a population in endeavouring to forecast the future of war."

"Now, M. Bloch, let us turn to another subject. We have talked hitherto about armies, and only about armies. What is your idea about navies?"

"My idea about a navy," said M. Bloch, "is that unless you have a supreme navy, it is not worth while having one at all, and that a navy that is not supreme is only a hostage in the hands of the Power whose fleet is supreme. Hence, it seems to me that for Russia to spend millions in the endeavour to create a deep-sea fleet of sea-going battleships is a great mistake. The money had much better be used for other purposes."

"What!" said I, "then, do you not think that Russia needs a navy?"

"A navy, yes," said M. Bloch, "a navy for coast defence, perhaps, and also cruisers, but a fighting fleet of battleships, no. It is a folly to attempt to create such a navy, and the sooner that is recognised the better."

"But," I persisted, "do you not agree with Captain Mahan in thinking that sea-power is the dominant factor in the destiny of nations?"

"Do not let us theorise; let us look at facts," said M. Bloch. "What I see very plainly is that the navy may be almost ignored as a vital factor in a war to the death between Russia and any of her neighbours. Suppose, for instance, that we had a war with Germany. What would be the good of our fleet? Suppose that it is inferior to that of Germany, it will be either captured, or

shut up in harbour, unable to go out. If it is superior to that of Germany, what better are we? Here we have history to guide us. We cannot hope to have such an unquestioned superiority at sea over the Germans as the French had in the war of 1870; but what use was the naval supremacy of France to the French in their death-grapple with the Germans? Why, so far from finding them useful, they absolutely laid their ironclads up in harbour and sent their crews to Paris to assist in the defence of the capital—and they did right. Germany was striking at the heart of France when she struck at Paris, and no amount of superiority over the German fleet on the part of the French could be counted for a moment as a set-off against the loss of their capital. So it will always be."

"But," I objected, "could the German fleet not be utilised for the purpose of landing an expedition on the Russian coast?"

"No doubt," said M. Bloch, "it might. But here again I may quote Count Moltke. When, in 1870, we were discussing the possibility of a French expedition to the shores of the Baltic, Moltke declared that, so far from regarding such an expedition with alarm, he would rather welcome it, because any diversion of French forces from the point where the decisive blow must be delivered would increase the German chances of success. Hence, if the Germans were to send an expeditionary force to Russian waters, it would only represent the subtraction of so many fighting men from the seat of war, where the real issue of the campaign would be decided. No; Russia would have no reason to fear any serious attack from the sea. That being so, what is the use of wasting all our resources upon ironclads which we could not use?

It would have been much better to have gone on piling up expenditure on our army much more rapidly than we have upon our fleet. In 1876 we spent twenty-seven million roubles on the navy, and twenty years later we were spending sixty-seven millions, so that the naval expenditure had more than doubled, while the expenditure on the army had only increased fifty per cent."

"Do you not think that a German, British, or Japanese fleet might seriously injure Russia by bombarding the coast towns?"

"No," said M. Bloch. "Such coast towns as we have, and they are not many, are for the most part well defended, too well defended to be seriously attacked by an enemy's fleet. The experience of Crete does not increase our dread of the bombarding ironclad as a method likely to affect the issues of a campaign. Why, is it not true that the international fleet on one occasion fired 70 shells and only killed three men and wounded 15?"

"And what about the protection of your commerce, M. Bloch?"

"The protection of our commerce would have to be undertaken (if undertaken at all) by cruisers and not by battleships. Besides, there should be some regard paid to the value of the thing protected, and the insurance which you pay for it. At this moment our oversea mercantile marine is small, so small compared with that of England that, although you are spending twice as much on your navy as we do, your naval insurance rate (if we may so call it) only amounts to 16 francs per ton of merchant shipping, whereas with us the rate is as high as 130 francs; or if it is reckoned by a percentage upon the trade, our naval expenditure is twice as high as yours. And to what purpose?"

"But, M. Bloch, supposing that our fleet is inferior in strength to the German fleet, and that it is wiped off the face of the sea. What then?"

"What then?" said M. Bloch. "Why, we shall just be in the position that the Italians were in when they lost their fleet at Lissa to the Austrians. But what effect had that decisive naval victory upon the fortunes of the campaign? The fate of Austria was sealed by the battle of Sadowa, and all naval losses which we might incur would naturally be charged for in the indemnity which we should impose upon our defeated enemy if we came off victorious, and if we were beaten on land our defeat at sea would not be a material aggravation of our position."

"But, M. Bloch, do not you think that you need a strong fleet in order to keep your channels of trade open?"

"I do not believe," said M. Bloch, "that you can keep your channels of trade open, even with the strongest fleet. I grant that if you have a supreme fleet, you may at least have a chance of keeping the trade routes open, but if you have not a supreme fleet (and for Russia this is out of the question) you can do nothing, and Russia, fortunately being self-contained and self-supporting, could manage to subsist better, if her oversea trade were cut off, than any other country."

"Then how would you apply your reasoning to England?"

"England," said M. Bloch, "is in a different category from all the other nations. You only grow enough bread in your own country to feed your people for three months in the year. If you do not command the seas, if you cannot bring to your markets the food of the world, you

are in the position of a huge beleaguered fortress with only three months' rations for the whole people. If you ask my opinion, I tell you frankly that I do not think your position is very enviable, not because of any danger from invasion, for I recognise the superiority of your fleet, but because it seems to me that any nation is in a very precarious position which has to depend for so much of its food upon countries across the sea. A single cruiser let loose upon one of your great trade routes would send up the price of provisions enormously, and although no one could hope to blockade the English ports, any interruption in the supply of raw material, any interference with the stream of food products which are indispensable for the sustenance of your people, would endanger you far more than the loss of a pitched battle.

"It is true that you are prosperous; but there are many elements in your population the material condition of which leaves much to be desired, and with the stress and strain of industrial stagnation, caused by the closing of markets abroad and the rise in the price of food which would be inevitable under any circumstances, you might have as considerable internal difficulties as any of those which threaten your neighbours. But, there again, if (which God forbid) England should find herself at war, the factor which will decide the issue will not be the decisive battle; it will be pressure of want, the lack of food, in short, the economic results which must inevitably follow any great war in the present complex state of human civilisation.

"In short," said M. Bloch, "I regard the economic factor as the dominant and decisive element in the matter. You cannot fight unless you can eat, and at the present moment you cannot feed your people and wage a great

war. To a certain extent this is already recognised, so much so that there are a few general principles that it is worth while mentioning. First, you may take it for granted that the great war, if it ever breaks out, will not take place until after the harvest has been gathered. To mobilise in spring, or in early summer, would bring starvation too closely home to the population for any statesman to think of it. Secondly, whenever there is a bad harvest you may be sure there will be no war. Even with a full granary it will be very difficult for any nation to feed its troops, to say nothing of its home population. With a bad harvest it would be impossible. Hence, if ever you should see a rapid buying-up of bread-stuffs on the part of any nation, you may feel sure that there is danger ahead; but so long as there is no attempt made to secure reserve supplies of grain, you may regard with comparative equanimity the menaces of war."

"Then, on the whole, you are hopeful concerning the future, M. Bloch?"

"Yes," said he; "hopeful with the hope that is born not of fantasy or of Utopian dreaming, but from the painstaking examination of hard, disagreeable facts. The soldier is going down and the economist is going up. There is no doubt of it. Humanity has progressed beyond the stage in which war can any longer be regarded as a possible Court of Appeal. Even military service has lost much of its fascination. At one time war appealed to the imagination of man, and the poets and painters found no theme so tempting as depicting the heroism of the individual warrior, whose courage and might often turned the tide of battle and decided the destiny of nations. All that has long gone by the board. War has become more and more a matter of mechanical arrangement. Modern

battles will be decided, so far as they can be decided at all, by men lying in improvised ditches which they have scooped out to protect themselves from the fire of a distant and invisible enemy. All the pomp and circumstance of glorious war disappeared when smokeless powder was invented. As a profession militarism is becoming less and less attractive. There is neither booty to be gained, nor promotion, with an ever increasing certainty of a disagreeable death, should war ever take place."

"The old toast in the British Army used to be," I said, "'Bloody war and quick promotion.'"

"Yes," said M. Bloch, "as long as bloody war only killed out a certain percentage it meant more rapid promotion for the rest, but if it kills out too many the attraction fails, for there is no promotion to a dead man. Side by side with the drying up of the attractiveness of a military career there has gone on an increasing agitation against the whole system, an agitation which finds its most extreme exponents among the Socialists, whose chief stock-in-trade is to dwell upon the waste of industrial resources caused by the present organisation of society on a competitive basis, which they maintain naturally and necessarily results in the excessive burdens of our armed peace. What the Governments will all come to see soon more or less clearly is that if they persist in squandering the resources of their people in order to prepare for a war which has already become impossible without suicide, they will only be preparing the triumph of the socialist revolution."

AUTHOR'S PREFACE

NATURAL philosophers declare that the atmosphere reveals at times the presence of a certain so-called cosmic dust. It influences the change of colours in the sky, it colours the sunlight with a bloody line, it penetrates our dwellings and our lungs, acts injuriously upon living organisms, and, falling even upon the summits of hills, leaves its traces upon their mantles of virgin snow.

In the public and private life of modern Europe something of the same kind reveals itself. A presentiment is felt that the present incessant growth of armaments must either call forth a war, ruinous both for conqueror and for conquered, and ending perhaps in general anarchy, or reduce the people to the most lamentable condition.

Is this unquiet state of mind the consequence of a mistaken or sickly condition of the nervous system of the modern man? Or is it justified by possible contingencies?

Such questions cannot be answered categorically. All would desire that the dangers caused by armaments were but a symptom which time will destroy. But even an unanimous desire cannot have the power to change the great concatenation of circumstances which are the cause of armaments, until the time shall come when, in the words of Von Thünen, the interests of nations and the interests of humanity shall cease to contend with one another, and culture shall have awakened a sense of the solidarity of the interests of all.

Such a state of affairs is unhappily still distant. It is true that the ruinousness of war under modern conditions is apparent to all. But this gives no sufficient guarantee that war will not break forth suddenly, even in opposition to the wishes of those who take part in it. Involuntarily we call to mind the words of the great Bacon, that "in the vanity of the world a greater field of action is open for folly than for reason, and frivolity always enjoys more influence than judgment." To-day these words are even more apposite than in the past. For Reason itself it is harder than before to find a path in the field of circumstances which change for ever. The speed with which relations change is a characteristic feature of our time. In modern times a few

years see greater changes in the material and moral condition of masses than formerly took place in the course of centuries. This greater mobility of contemporary life is the consequence of better education, the activity of parliaments, of associations, and of the press, and the influence of improved communications. Under such influences the peoples of the world live lives not only their own, but the lives of others also; intellectual triumphs, economic progress, materialised among one people, react at once on the condition of others; the intellectual outlook widens as we ascend, as the seascape widens from a hill, and, like the sea, the whole world of culture drifts and fluctuates eternally.

Every change in conditions or disposition is affirmed only after a struggle of elements. An analysis of the history of mankind shows that from the year 1496 B.C. to the year 1861 of our era, that is, in a cycle of 3357 years, were but 227 years of peace and 3130 years of war: in other words, were thirteen years of war for every year of peace. Considered thus, the history of the lives of peoples presents a picture of uninterrupted struggle. War, it would appear, is a normal attribute to human life.

The position now has changed in much, but still the new continues to contend with the

remnants of the old. The old order has changed and given place to the new. Siéyes compared the old order of things with a pyramid standing upon its apex, declaring that it must be given a more natural position and placed upon its base. This demand has been fulfilled in this sense, that the edifice of state has been placed upon foundations incomparably wider than before, affirmed on the rights and wills of millions of men, the so-named middle order of society.

It is natural that the greater the number of voices influencing the course of affairs the more complex is the sum of interests to be considered. The economic revolution caused by the application of steam has been the cause of entirely new and unexpected conditions between the different countries of the world and between the classes inhabiting them, enriching and strengthening some, impoverishing and weakening others, in measure as the new conditions permitted to each participation in the new distribution of revenues, capital, and influence.

With the innumerable voices which are now bound up in our public opinion, and the many different representatives of its interests, naturally appear very different views on militarism and its object, war. The propertied classes, in particular those whose importance and condition was

established during the former distribution of power and former methods of acquisition, precisely those classes whom we call Conservatives, are inclined to confuse even the intellectual movement against militarism with aspirations for the subversion of social order. In this is sometimes given, they attribute, too great an importance to single and transitory phenomena, while no sufficient attention is turned on the dangerous fermentation of minds awakened by the present and constantly growing burdens of militarism.

On the other hand, agitators, seeking influence on the minds of the masses, having deduced from the new conditions with recklessness and even intentional misrepresentation the most extreme conclusions, deny all existing rights, and promise to the masses more than the most perfect institutions could give them. In striving to arouse the masses against militarism such agitators unceremoniously ascribe to every thinker who does not share their views selfish impulses, although in reality he may be following sincere convictions.

And although the masses are slow to surrender themselves to abstract reasoning, and act usually only under the influence of passion or disaster, there can be no doubt that this agitation, ceaselessly carried on in parliaments, on platforms, and in the press, penetrates more and more deeply

the people, and awakens in it those feelings which in the midst of the disasters called forth by war might easily lead them to action. The evil of militarism serves to-day as the chief instrument of the activity of agitators, and a tangible object for attack, while in reality these agitators strive not only for the suppression of militarism, but for the destruction of the whole social order.

With such a position of affairs—that is, on the one hand, the ruinous competition in constantly increasing armaments, and, on the other, the social danger for all which grows under a general burden — it is necessary that influential and educated men should seriously attempt to give themselves a clear account of the effect of war under modern conditions; whether it will be possible to realise the aims of war, and whether the extermination of millions of men will not be wholly without result.

If, after consideration of all circumstances, we answer ourselves, "War with such conditions is impossible; armies could not sustain those cataclysms which a future war would call forth; the civil population could not bear the famine and interruption of industry," then we might ask the general question: "Why do the peoples more and more exhaust their strength in accumulating means of destruction which are valueless even to

accomplish the ends for which they are prepared?"

It is very natural, that even a long time ago, in many Western European countries, in all ranks of society, many attempts have been made, partly theoretical and partly practical, to eliminate war from the future history of humanity. Philosophers and philanthropists, statesmen and revolutionaries, poets and artists, parliaments and congresses, more strongly and strongly every day insist upon the necessity of avoiding the bloodshed and disasters of war.

A time was when it seemed protests against war were assuming practical importance. But the desire for revenge awakened by the events of 1870 turned the disposition of peoples in another direction. Nevertheless the idea remains and continues to operate on minds. The voices of scholars and the efforts of philanthropists directed against war naturally found an echo among the lower orders of populations. In the twilight of imperfect knowledge fantastic visions appeared, of which agitators took advantage. This agitation increased every year.

In recent times war has become even more terrible than before in consequence of perfected weapons of destruction and systems of equipment and training utterly unknown in the past. What

is graver still, the immensity of armies and the training of soldiers in entrenchment must call forth difficulties in provisioning and defence from climatic conditions.

It is true that certain military authors think that the bloodshed of the battlefield will be decreased in consequence of the greater distance between the combatants, that attacks by cavalry and with the bayonet are improbable in the present conditions of firearms, while retreat will be facilitated for a defeated army. But, even admitting this, which is by no means proved, there can be no doubt that with modern firearms the impression which battle makes on armies will be incomparably greater than before, while smokeless powder will change even the nature of these impressions. Infantry and artillery fire will have unprecedented force, while aid to the wounded will be made more difficult by the great range both of small-arms and of artillery. Smoke will no longer conceal from the survivors the terrible consequences of the battle, and every advance will be made with full appreciation of the probabilities of extermination. From this, and from the fact that the mass of soldiers will have but recently been called from the field, the factory, and the workshop, it will appear that even the psychical conditions of war have changed. Thus

in the armies of Western states the agitation against war may extend even so far as the materialisation of socialistic theories subverting the bases of monarchies.

The thought of those convulsions which will be called forth by a war, and of the terrible means prepared for it, will hinder military enterprise, notwithstanding the passionate relations of the people to some of the questions in dispute among them. But. on the other hand, the present conditions cannot continue to exist for ever. The peoples groan under the burdens of militarism. Europe is ever confronted with the necessity of drawing from the productive forces of the peoples new and new millions for military purposes. Hardly was the small-calibre rifle adopted when invention made a new advance, and there can be no doubt that soon the Great Powers will be compelled to adopt a weapon of still smaller calibre with double the present energy, allowing soldiers to carry a greater number of cartridges. At the same time we see in France and Germany preparation of new artillery to turn to the best advantage the new smokeless powder. Millions are expended on the construction of new battleships and cruisers. But every year brings such radical improvements in guns, in speed, and in coal-carrying capacity that vessels hardly launched

are obsolete, and others must be built to replace them. In view of what we see in Germany, Italy, and Austria, we are compelled to ask, Can the present incessant demands for money from Parliament for armaments continue for ever without social outbreaks? And will not the present difficulty of carrying on war at last be replaced by an absolute impossibility, at least in those countries where high culture has increased the value of the life of every citizen? Thus, in the war of the future will appear not only quantitative differences in the number of armies but also qualitative differences which may have immense importance.

But what is still graver are the economic and social convulsions which war will call forth in consequence of the summons under the flag of almost the whole male population, the interruption of maritime communications, the stagnation in industry and trade, the increase in the price of the necessaries of life, and the destruction of credit. Will these convulsions not be so great that governments will find it impossible in the course of time indicated by military specialists as the probable duration of war to acquire means for maintaining their armies, satisfy the requirements of budgets, and at the same time feed the destitute remainder of the civil population?

Within the last twenty-five years such changes have taken place in the very nature of military operations that the future war will in no way be like its predecessors. In consequence of the adoption of improved artillery, explosive shells, and small-arms which allow the soldier to carry an immense number of cartridges, in consequence of the absence of concealing smoke, in consequence of the immense proportions which military operations must take as a result of the vastness of armies, such unquestioned authorities on military affairs as Moltke and Leer and many other eminent military writers declare that a future war will last many years.

But with modern political, social, and economic conditions it would be strange if there did not arise in England, Italy, Austria, Russia, Germany, and France—in one country from one reason, in another from another—factors which will disarrange the apparatus of war and prevent its continuance before the ends desired shall have been attained. This is a question of the first gravity, yet military writers entirely ignore it, attending only to the technical side of war.

In consequence of alliances concluded, all plans of activity are founded on the combined operations of allied armies. What will happen to combinations founded on united action when one

or another of the allies is compelled to cease operations through insufficient means for resisting the social influences of war?

Thus we find that military questions are bound up with questions of economy. But military writers look on the future war only from the point of view of attaining certain objects by destroying the armies of the enemy; the economic and social consequences of war, if they are considered at all, are considered only as secondary objects. Even economists, in consequence of the difficulty of such a question, have made no single investigation resulting in a complete picture of the consequences of war. But this is in no way surprising.

Without acquaintance with the technicalities of warfare it is impossible to understand what will be its precise conditions, or to define the limits where the operation of defined laws will cease and accidental phenomena appear. A result could only be obtained by careful study of the very nature of war in all its phenomena. Twenty years ago such a task would have been comparatively easy. But the last two decades have witnessed immense changes equal to revolutions. First of all a fundamental change has taken place in the very elements which take part in war and from which its course depends. In a future war

on the field of battle, instead of professional soldiers, will appear whole peoples with all their peculiar virtues and failings.

A full appreciation of the conditions of a future war is all the more difficult since on the one hand new methods of attack and defence, as yet insufficiently tested, will be employed, and, on the other hand, because former wars were carried on by means of long-service professional soldiers. But not only will a future war take the character of a struggle of whole nations living a wide and complex life, with military problems corresponding in complexity, but the arms and apparatus of destruction are the very finest result of the inventiveness and creative activity of mankind.

The elements contending in a future war will be all the moral and intellectual resources of nations, all the forces of modern civilisation, all technical improvements, feelings, characters, minds and wills—the combined fruit of the culture of the civilized world. It is thus that this question demands the attention of all society. In Western states, especially from the adoption of conscription, interest in military affairs has spread through all ranks of society.

Reasoning on the basis of future wars, military writers declare that the chief elements of warfare, although only in their general character, must be

made known to the population, which in the event of war constitutes the army, and from whose activity depends the issue of campaigns. It is not enough that officers and soldiers actually on service know what they are to meet in a future war. In the ranks of armies in time of war will appear an immense proportion of officers and men from the reserves, who for many years have taken no part in military exercises. As a consequence of this, in every state appear popular compositions with the object of informing the public of the technique of modern war, all, almost without exception, neglecting the economic side of the question. Some prejudge a future war from the example of history. Such neglect, as a rule, the improvement of weapons and the increased complexity of strategy and tactics. Others, well informed as to the improvement of weapons, but neglecting inevitable conclusions, assume that war will last but a short time, and therefore pay no attention to the financial and economic perturbation which it will cause or its effects on the moral condition of the people.

The late General Fadeleff very justly pointed out the danger arising from such a state of affairs. "The opinion of the people of their strength has immense influence on the course of politics; this opinion is often frivolous and unfounded, though

from it may depend the destiny of nations. Yet it is generally agreed that even the elements of military affairs constitute a speciality which must remain unknown by the public. But when the moment comes to express its opinion on war and peace, to balance the chances of success, it may be assumed that of ten military specialists whose authority is accepted nine will adopt the opinions of the social medium in which they live. Thus a public, entirely ignorant of military questions, often becomes the deciding factor in decision. To free oneself from the influence of public opinion in such matters is impossible." It was with the object of making accessible in some degree information accumulated on all matters directly or indirectly connected with war that the present work was undertaken, of which this volume is but an abridgment.

It is but a slight service to diagnose an illness and pronounce it incurable. The position of the European world, the organic strength of which is wasted, on the one hand, in the sacrifice of millions on preparations for war, and, on the other, in a destructive agitation which finds in militarism its apology and a fit instrument for acting on the minds of the people, must be admitted to be abnormal and even sickly. Is it possible that there can be no recovery from this?

We are deeply persuaded that a means of recovery exists if the European states would but set themselves the question—in what will result these armaments and this exhaustion, what will be the nature of a future war, can resource be had to war even now for the decision of questions in dispute, and is it possible to conceive the settlement of such questions by means of the cataclysm which, with modern means of destruction, a war between five Great Powers with ten millions of soldiers would cause?

Delay in the practical settlement of this question is impossible. And when a settlement is arrived at it will be shown that for twenty, forty years millions have been wasted yearly on fruitless armaments which cannot be employed, and by means of which the decision of international disputes is inconceivable. But then it will be too late; then such immense losses will have been sustained that Europe generally will be in a worse position than Italy to-day. Then, instead of the dangers of international war, other threatening symptoms will have appeared.

That war will become impossible in time—this is indicated by all. Its apparatus grows more rapidly than the productiveness of European states, and preparations will continue to swallow more and more of the in ome of peoples. Mean-

time the relations of the nations become closer and closer, their interdependence more plain, and their solidarity in any great convulsion will constantly grow.

That war will finally become impracticable is apparent. The question is more apposite—when will the recognition of this inevitable truth be spread among European governments and peoples? When the impossibility of resorting to war for the decision of international quarrels is apparent to all, other means will be devised.